What is claimed is:

1. A signal acquisition instrument, comprising:

an input stage referenced to a first ground, said input stage for receiving an input signal;

a memory for storing information related to said input signal;

an instrumentation network referenced to a second ground, said instrumentation network for processing information from said memory; and

a switch network having at least two switches for selectively switching said memory between said first and second grounds;

wherein said first and second grounds are electrically isolated.

2. The signal acquisition instrument of claim 1 wherein said switch network includes at least one semiconductor switch.

3. The signal acquisition instrument of claim 1 wherein at least one switch is a break-before-make switch.

4. The signal acquisition instrument of claim 1 wherein said switch network selectively connects said memory to said input stage.

5. The signal acquisition instrument of claim 1 wherein said switch network selectively connects said memory to said instrumentation network.

6. The signal acquisition instrument of claim 1 wherein said memory is a digital memory.

7. The signal acquisition instrument of claim 1 wherein said memory is an analog memory.

8. The signal acquisition instrument of claim 1 wherein said an instrument network includes a display.

9. The signal acquisition instrument of claim 1 wherein said second ground is electrically connected to an AC power ground line.

10. An oscilloscope, comprising:

an input stage referenced to a first ground, said input stage for receiving an input signal;

a memory for storing information related to said input signal;

an instrumentation network referenced to a second ground, said instrumentation network for processing information from said memory;

a display for displaying a waveform representation of said input signal; and

a switch network having at least two switches for selectively switching said memory between said first ground and said second ground;

wherein said first and second grounds are electrically isolated.

11. The oscilloscope of claim 10 wherein said switch network includes at least one semiconductor switch.

12. The oscilloscope of claim 10 wherein at least one switch is a break-before-make switch.

13. The oscilloscope of claim 10 wherein said switch network selectively connects said memory to said input stage.

14. The oscilloscope of claim 10 wherein said switch network selectively connects said memory to said instrumentation network.

15. The oscilloscope of claim 10 wherein said memory is a digital memory.

16. The oscilloscope of claim 10 wherein said memory is an analog memory.

17. The oscilloscope of claim 10 wherein said oscilloscope is a digital storage oscilloscope.

18. The oscilloscope of claim 10 wherein said second ground is electrically connected to an AC power ground line.

19. A method of acquiring a signal comprising:

receiving a signal referenced to a first ground;

storing information about the received signal in a memory referenced to the first ground;

disconnecting the memory from the first ground;

referencing the memory to a second ground; and

processing the stored information using a system referenced to the second ground.

20. The method of claim 19 further including the step of displaying a waveform representation of the received signal.